GEANT-3.21 Simulation of the Balbekov
Square Cooling Ring

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Ring Cooler/Emittance Exchange group meeting.

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Initial beam conditions

1) $E_{tot} = 250\ MeV$

2) $\sigma_{E_{tot}} = 18\ MeV$

3) $\sigma_{P_x} = \sigma_{P_y} = 32\ MeV$

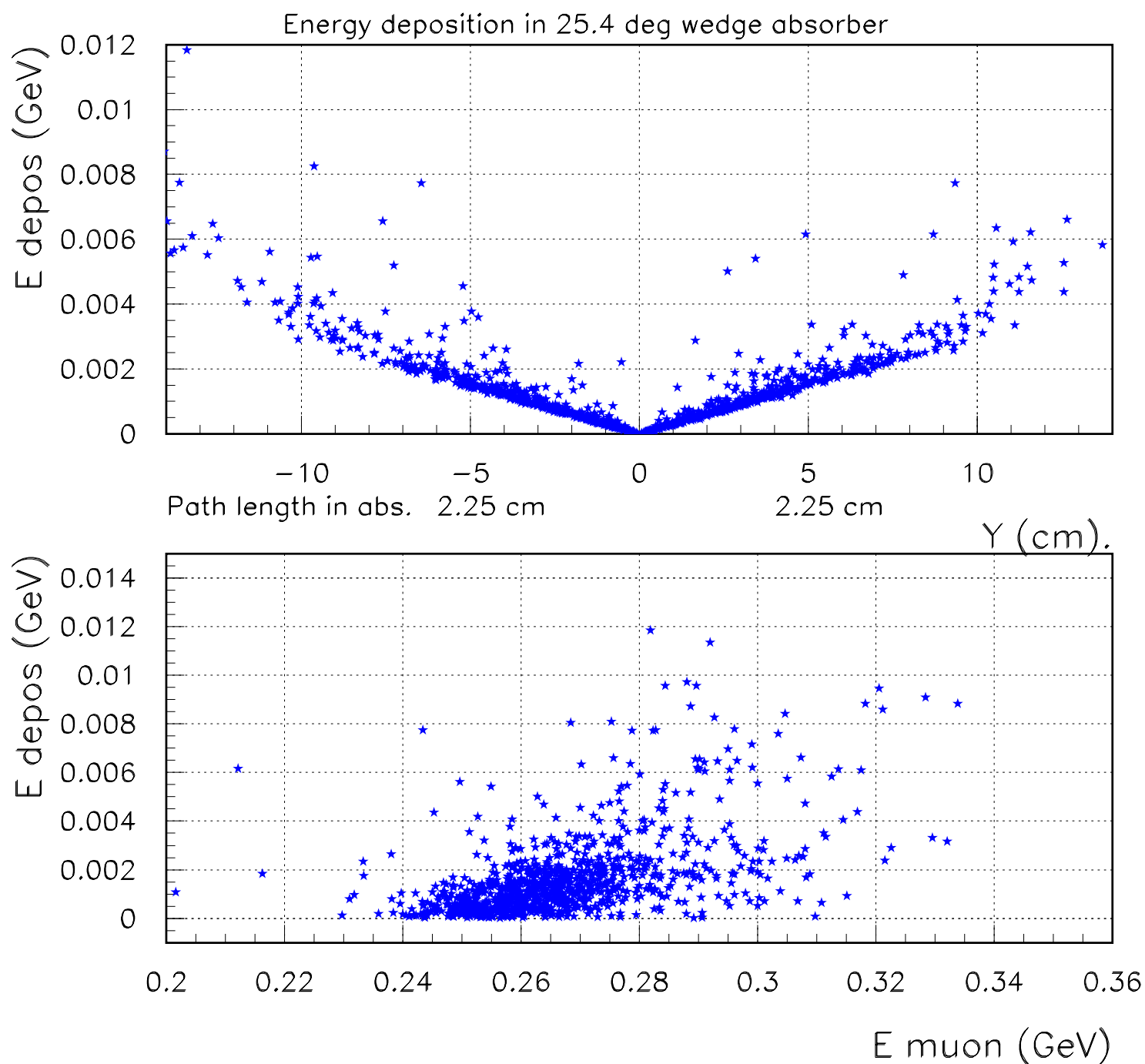4) $\sigma_x = \sigma_y = 4\ cm$

5) $\sigma_z = 8\ cm$

energy-momentum correlation according
V.B. MUC-NOTE-COOL_THEORY-246

and few parameters

6) $f_{RF} = 205.900$

7) $G = 15\ MV/m$

synchronous phase for accel. $= 30^{0}$

Energy deposition in 25.4 deg wedge absorber

Figure 1: Energy deposition at LH_2 wedge absorber.

Tetra Solenoid Focused Ring
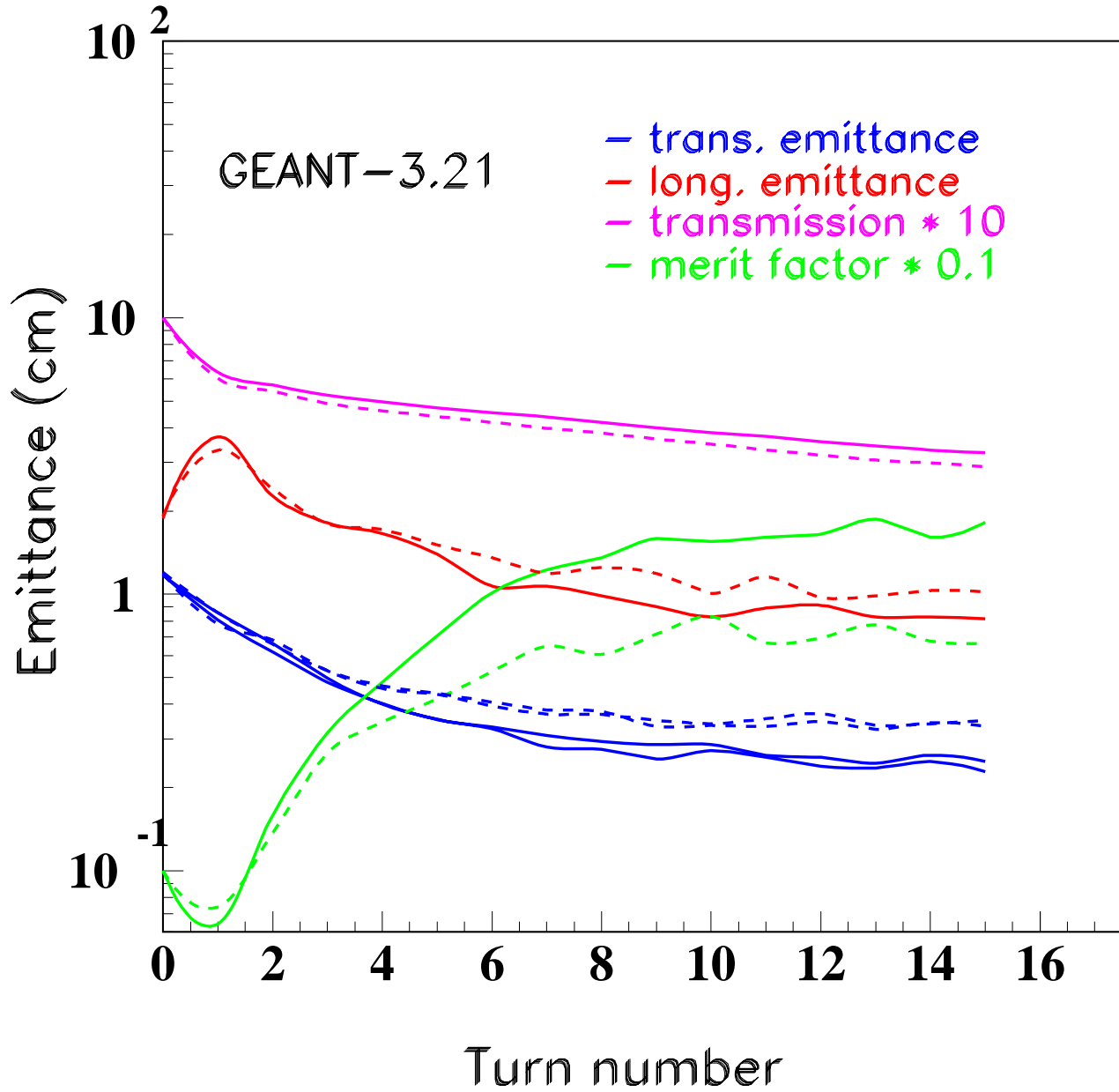

Figure 2: Emittances, transmision and merit factor. Solid - without aluminium window, dashed - with window.
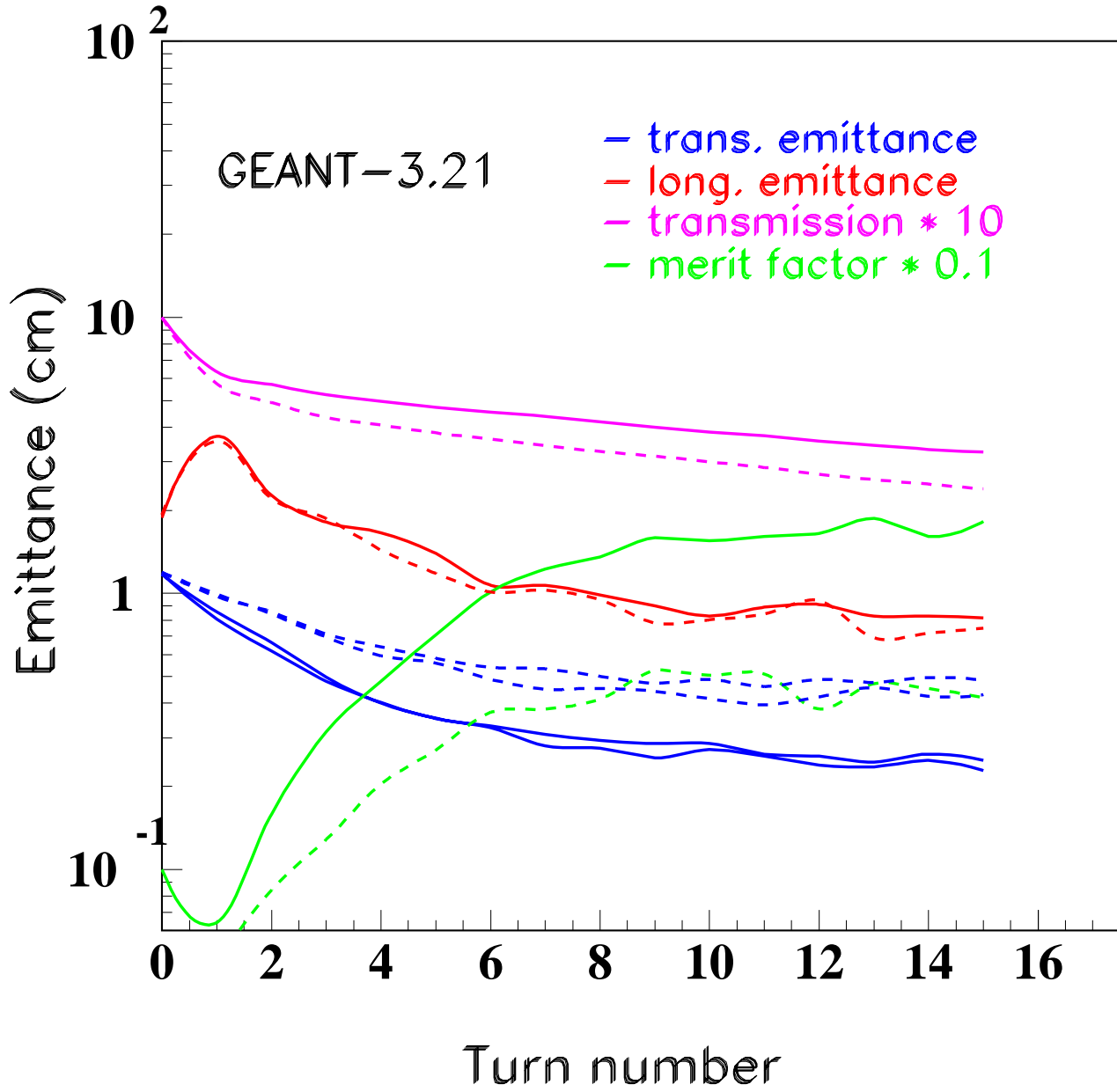
Figure 3: Comparison of berilium wedge absorber with LiH one.
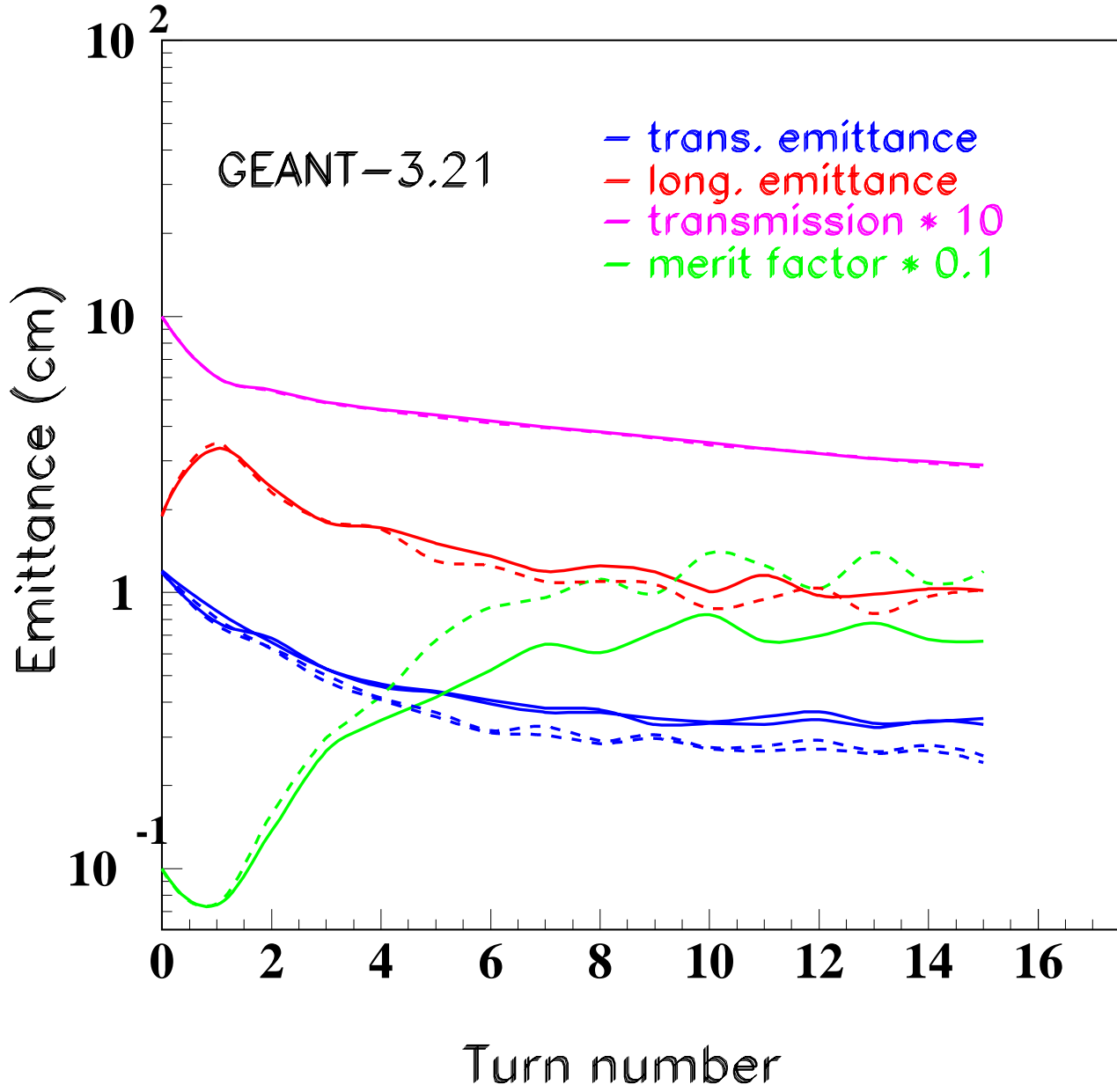
Tetra Solenoid Focused Ring

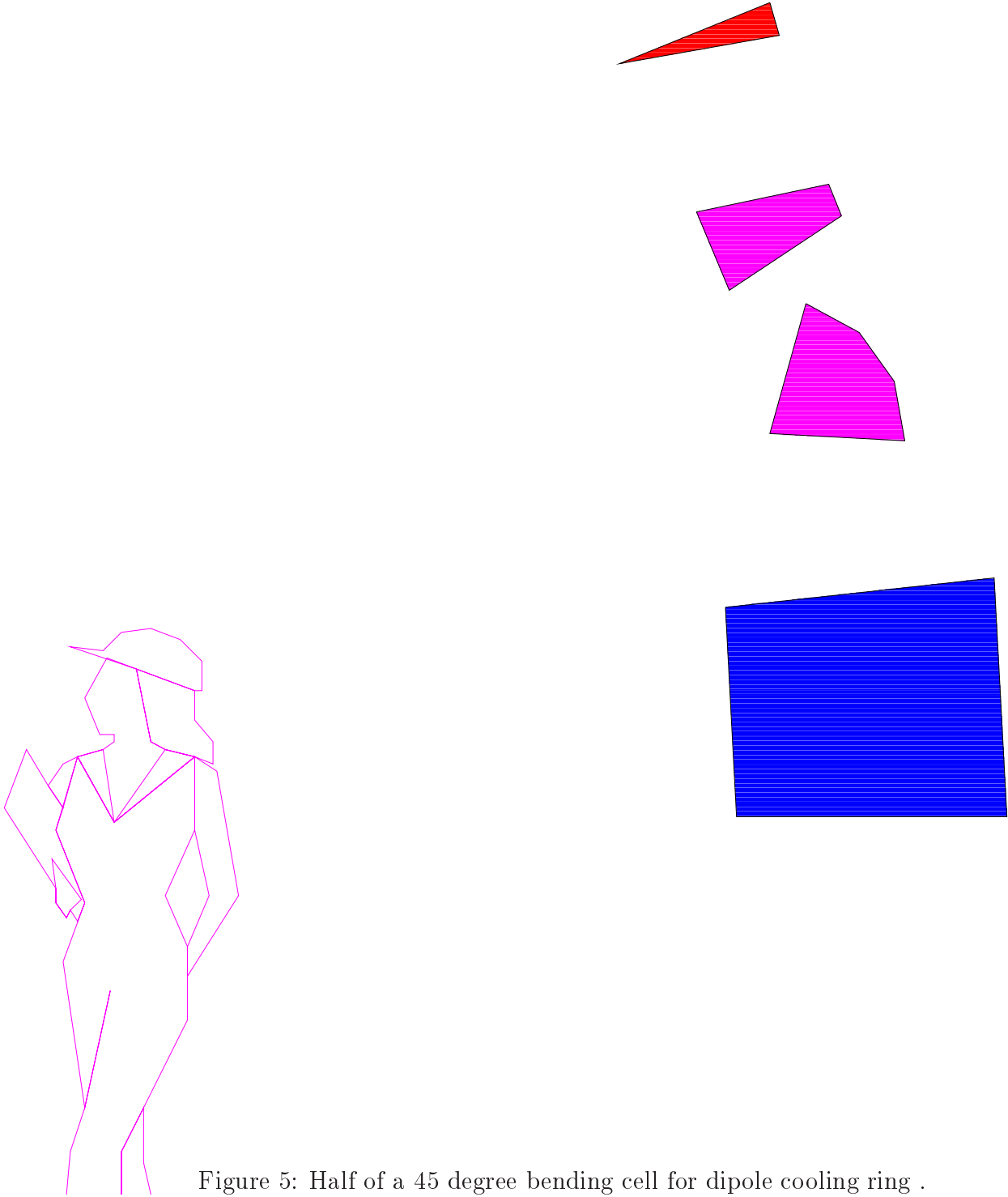Figure 4: Comparison of aluminium and carbon (dashed) window results.

Figure 5: Half of a 45 degree bending cell for dipole cooling ring .
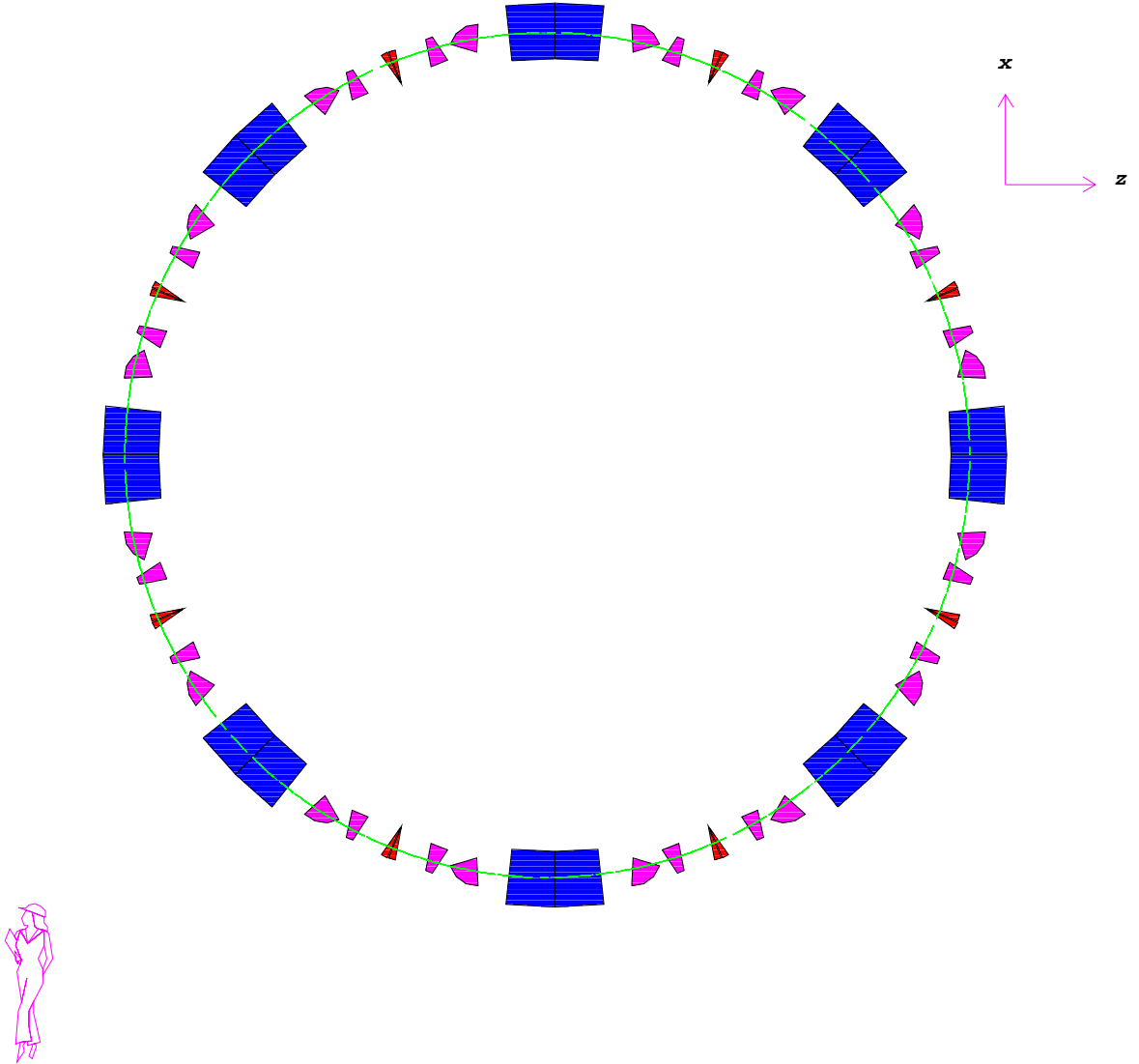
Kirk-Garren Dipole Ring

Figure 6: Top view of a dipole cooling ring. $B_y = -1.63574$, $E_m = .25\,GeV$.